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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,671	10/12/2001	Toshiyuki Miyabashi	U 013667-3	1087

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 06/19/2003

NO

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,671

Applicant(s)

MIYABASHI ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/31/02, 4/29/02.
- 2a) ☐ This action is **FINAL**: 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9, 15-16, and 18-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubota et al. (U.S. 2003/0069329).

Kubota et al. disclose process for producing a polymer emulsion comprising fine particles of a polymer wherein the process comprises the steps of mixing water, monomer, emulsifier, and polymerization initiator together to allow emulsion polymerization to proceed and then adjusting the pH of the polymer emulsion to 7-9 by adding alkali metal hydroxide such as sodium, lithium, or potassium hydroxide. The fine particles of the polymer are crosslinked polymers that contain 1-10% structure derived from carboxyl-containing unsaturated vinyl monomer and 0.2-4% structure derived from crosslinkable monomer. Further, it is disclosed that the fine particles of the polymer have film-forming property, have on its surface carboxyl group, and have reactivity with divalent metal salt identical to that presently claimed. Kubota et al. also disclose ink comprising pigment, water, solvent, 0.1-30% polymer emulsion as described above, penetrating agent such as dialkylene glycol monobutyl ether, 0.5-40% wetting agent such as glycerin, 0.1-40% saccharide, and 0.01-5% alkali hydroxide. There is disclosed a recording method wherein the above ink is deposited on a recording medium by ink jet printer to form printed record

(paragraphs 12,16-18, 38, 101, 108, 11-112, 114, 117, 120, 124-125, 130-131, 164, 166, 168, 170, and 172). Although there is no disclosure that the solid wetting agent, i.e. saccharide, has the function of retaining water and is solid at room temperature, given that Kubota et al. disclose solid wetting agent identical to that presently claimed, it is clear that the wetting agent would inherently function to retain water and is solid at room temperature.

In light of the above, it is clear that Kubota et al. anticipate the present claims.

3. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Yeung et al. (U.S. 5,387,641) or Senoo et al. (U.S. 4,877,688).

Yeung et al. disclose process for producing a polymer emulsion comprising fine particles of a polymer wherein the process comprises the steps of mixing water, monomer, emulsifier, and polymerization initiator together to allow emulsion polymerization to proceed and then adjusting the pH of the polymer emulsion to 7-12 by adding alkali metal hydroxide such as sodium hydroxide or potassium hydroxide (col.3, lines 34-50, col.6, lines 39-49, col.7, lines 4-5 and 37-64, col.13, lines 48-50, and Table V).

Alternatively, Senoo et al. disclose process for producing a polymer emulsion comprising fine particles of a polymer wherein the process comprises the steps of mixing water, monomer, emulsifier, and polymerization initiator together to allow emulsion polymerization to proceed and then adjusting the pH of the polymer emulsion to 5-9.5 by adding alkali metal hydroxide such as sodium hydroxide (col.4, line 53-col.5, line 19 and example 1).

In light of the above, it is clear that Yeung et al. or Senoo et al. anticipate the present claims.

4. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Rheenen et al. (U.S. 5,916,693).

Van Rheenen et al. disclose process for producing a polymer emulsion comprising fine particles of a polymer wherein the process comprises the steps of mixing water, monomer, emulsifier (surfactant), and polymerization initiator together to allow emulsion polymerization to proceed and then adjusting the pH of the polymer emulsion to 7-9.5 by adding alkali metal hydroxide such as sodium hydroxide. The fine particles of the polymer are film-forming and are obtained from 0.5-5% carboxyl-containing unsaturated vinyl monomer and 0.01-5% crosslinkable monomer (col.1, lines 13-18, col.1, line 60-col.2, line 5, col.2, lines 14-34 and 50-63, col.3, lines 40-47, col.4, lines 60-64, and col.5, line 55). Given that Van Rheenen et al. disclose polymer identical to that presently claimed, i.e. made from the same type and amount of monomer, it is clear that the polymer would inherently have reactivity with divalent metal salt as presently claimed.

In light of the above, it is clear that Van Rheenen et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject-matter-sought-to-be-patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (U.S. 2003/0069329) in view of either Belmont et al. (U.S. 5,630,868) or Suzuki et al. (U.S. 6,153,001).

The disclosure with respect to Kubota et al. in paragraph 2 above is incorporated here by reference.

The difference between Kubota et al. and the present claimed invention is the requirement in the claims of specific type of pigment.

Belmont et al. disclose the use of modified carbon black containing hydrophilic group on its surface wherein the hydrophilic group includes sulfonic acid, sulfinic acid, carboxylic acid and their salts. The motivation for using such pigment is that it has improved water dispersability as compared to untreated carbon black and produces ink with good stability, jettability, print quality, and optical density (col.4, lines 15-21, 29-35, and 44-46, col.5, lines 46-47, col.5, line 63-col.6, line 6, and col.6, lines 41-56).

Alternatively, Suzuki et al. disclose self-dispersing pigment containing hydrophilic group on its surface wherein the hydrophilic group includes sulfonic acid and carboxylic acid and their salts. The motivation for using such pigment is that no dispersant is required to stably disperse the pigment in the ink (col.7, lines 5-62).

In light of the motivation for using specific type of pigment disclosed by either Belmont et al. or Suzuki et al., it therefore would have been obvious to one of ordinary skill in the art to use such pigment in the ink of Kubota et al. in order to produce ink which has good stability, jettability, print quality, and optical density, or alternatively, to produce ink which does not require dispersant, and thereby arrive at the claimed invention.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (U.S. 2003/0069329) in view of Hayashi et al. (U.S. 6,500,248).

The disclosure with respect to Kubota et al. in paragraph 2 above is incorporated here by reference.

The difference between Kubota et al. and the present claimed invention is the requirement in the claims of 1,2-alkanediol.

Hayashi, which is drawn to ink jet inks, disclose the use of 1,2-alkanediol such as 1,2-hexanediol or 1,2-pentanediol in order to improve color development and prevent feathering or bleeding in prints (col.3, lines 49-67).

In light of the motivation for using 1,2-alkanediol disclosed by Hayashi as described above, it therefore would have been obvious to one of ordinary skill in the art to use 1,2-alkanediol in the ink of Kubota et al. in order to produce ink with good color development which produces prints that do not exhibit feathering or bleeding, and thereby arrive at the claimed invention.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

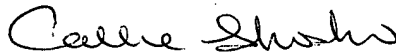
Miyabayashi (U.S. 6,538,047) discloses process for producing polymer emulsion and ink comprising the polymer emulsion, however, the pH of the emulsion is adjusted using ammonia not hydroxide as presently claimed.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
June 13, 2003